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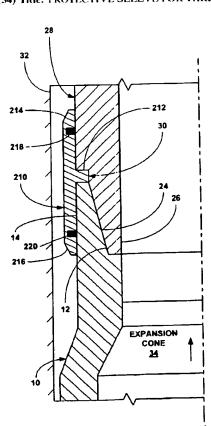
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[Continued on next page]

(54) Title: PROTECTIVE SLEEVE FOR THREADED CONNECTIONS FOR EXPANDABLE LINER HANGER



(57) Abstract: A tubular sleeve (210) is coupled to and overlaps the threaded connection (12, 14) between a pair of adjacent tubular members (14, 16).

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV. MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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Declaration under Rule 4.17:

of inventorship (Rule 4.17(iv)) for US only

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INTERNATIONAL SEARCH REPORT

International application No.

		PCT/US03/10144			
A. CLASSIFICATION OF SUBJECT MATTER					
IPC(7) US CL	: E21B 19/16	ne			
US CL: 166/380, 85.3, 309, 387, 72, 73,; 285/382.7, 398 According to International Patent Classification (IPC) or to both national classification and IPC					
B. FIELDS SEARCHED					
	aumentation searched (classification system followed by	classification symbols			
	56/380, 85.3, 309, 387, 72, 73, 187, 195, 206, 207, 21	,, ,,			
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Deaumantia	a accepted attack the minimum decreases in a star at		A - 5-11		
None	on searched other than minimum documentation to the e	extent that such documents are included in	ine fields searched		
110					
					
	ta base consulted during the international search (name	of data base and, where practicable, sear	rch terms used)		
EAST					
	UMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where ap		Relevant to claim No.		
A	US 6,405,761A (SHIMIZU et al) 18 June 2002, see e	entire document	1-144		
A	US 5 971 443 A (NOEL et al.) 26 October 1999, see	entire document	1-144		
**	US 5,971,443 A (NOEL et al) 26 October 1999, see entire document				
A	US 5,309,621 A (O'DONNELL et al)10 May 1994, see entire document 1-144		1-144		
A	US 3,997,193 A (TSUDA et al) 14 December 1976, see entire document		1-144		
A	US 3,989,280 A (SCHWARZ) 02 November 1976, see entire document		1-144		
	Co all all and an investment a				
A	US3,834,742 A (MCPHILLIPS) 10 September 1974, see entire document		1-144		
Δ .	IIS 2 570 905 A (VAST) 25 May 1071 con entire de	our ant	1 144		
A	US 3,579,805 A (KAST) 25 May 1971, see entire document		1-144		
A	US 2,647,847 A (BLACK et al) 04 August 1953, see entire document		1-144		
			}		
X	US 4,693,498 A (BAUGH et al) 15 September 1987,	, see Fig. 2a and 2b	64		
			}		
M					
	r documents are listed in the continuation of Box C.	See patent family annex.			
۱• s	special categories of cited documents:	"T" later document published after the in date and not in conflict with the appl			
	a defining the general state of the art which is not considered to be	principle or theory underlying the in-	vention		
		"X" document of particular relevance; the			
1	optication or patent published on or after the international filing date	considered novel or cannot be considered novel or cannot be considered when the document is taken alone	ered to involve an inventive step		
	at which may throw doubts on priority claim(s) or which is cited to the publication date of another citation or other special reason (as	"Y" document of particular relevance; the	elaimed invention cannot be		
specified		considered to involve an inventive st	ep when the document is		
"O" document referring to an oral disclosure, use, exhibition or other means		combined with one or more other su being obvious to a person skilled in			
"P" document published prior to the international filing date but later than the		"&" document member of the same pater	1 family		
priority date claimed					
Date of the actual completion of the international search Date of mailing of the international search			tch report		
30 July 2003	(30.07.2003)	3100	1 200 3		
30 July 2003 (30.07.2003) Name and mailing address of the ISA/US		Authorized officer			
Mail Stop PCT, Atm: ISA/US		Roger J. Schoeppel			
Commissioner for Patents P.O. Box 1450					
Ale	exandria, Virginia 22313-1450	Telephone No. (703) 306-4180			
racsimile N	o, (703)305-3230	1			

Form PCT/ISA/210 (second sheet) (July 1998)

PCT/U	

INTERNATIONAL SEARCH REPORT

egory *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
x	US 6,275,556 A (KINNEY et al) 14 August 2001, see Fig, 3	64
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/10144

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)				
This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:				
ı. 🗌	Claim Nos.: because they relate to subject matter not required to be searched by this Authority, namely:			
2.	Claim Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:			
3.	Claim Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).			
Вох П Ов	servations where unity of invention is lacking (Continuation of Item 2 of first sheet)			
	onal Searching Authority found multiple inventions in this international application, as follows: ontinuation Sheet			
1. X 2. 3. 3.	As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:			
4. Remark on	No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.			

INTERNATIONAL SEARCH REPORT	PCT/US03/10144				
BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS L. The inventions listed as Groups I-IV do not relate to a single general inventive of 13.2, they lack the same or corresponding special technical features for the folio deforming a tubular with plastic deformation whereas Group II does not make stubular subjected to radial deforming and plastic deformation (in eight of the ince well. The groups are further distinguished in whether a flanged sleeve is used internal or external, whether the connecting tubes are threaded or not, inter alia	concept under PCT Rule 13.1 because, under PCT Rule owing reasons: Group I comprises the method of radially uch a deformation. Groups III and IV comprise using a dependent claims) in completing a geothermal energy in making up a tubular string, whether the flange is				
This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid. I. Claims 1-63, comprising 5 independent claims, drawn to a "Method". II. Claims 64-127, comprising 5 independent claims, drawn to an "Apparatus". III. Claims 124-141, comprising 10 independent claims, drawn to a "Method and Apparatus for Extracting Geothermal Energy." IV. Claim 142, drawn to a "Method of Testing."					
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